



BoI of Appeal

#21  
8/29/03  
Dm

RECEIVED

2003 AUG 28 AM 8:28

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: : Docket: OT-4331  
Richard J. Ericson : Date: August 22, 2003  
Appln. No. 09/162,821 : Appeal No. 2003-0404  
Filing Date: September 29, 1998 :

Title: ELEVATOR SYSTEM HAVING DRIVE MOTOR  
LOCATED BELOW THE ELEVATOR CAR

Board of Patent Appeals and Interferences  
US Patent and Trademark Office  
PO Box 1450  
Alexandria, Virginia 22313-1450

Certificate of Mailing under 37 CFR 1.8  
I hereby certify that this document is being deposited  
with the United States Postal Service on August 22, 2003  
with sufficient postage as first class mail in an envelope  
addressed to: Bd. of Pat. Appeals and Interf.

US Patent and Trademark Office  
PO Box 1450  
Alexandria, Virginia 22313-1450



Sean W. O'Brien

REQUEST FOR REHEARING

Applicant is receipt of a Decision on Appeal, mailed June 23, 2003, from the Board of Patent Appeals and Interferences. Applicant respectfully requests rehearing, based on the following points that Applicant believes have been misapprehended or overlooked in rendering the Decision.

- (1) In affirming the Examiner's rejection of claim 16 (along with claims 2, 5 and 19) as obvious under 35 U.S.C. § 103 over U.S. Patent No. 1,132,769 (Gale) in view of Japanese Patent Document No. 49-20811 (Habano), the Decision specifies a motivation for modification that reveals a fundamental misapprehension.

In the Decision, the Board affirms the Examiner's determination that it would have been obvious to modify the cables of Gale to be a flat rope, as allegedly suggested and taught by Habano. The Decision states that,

In our view, Habano's teachings that a ribbon-form rope can be used as a hoisting rope in elevators and that the ribbon-form rope eliminates the back-twisting tendency of conventional twisted ropes provides ample motivation for a person of ordinary skill in the art at the time the invention was made to have replaced Gale's cables 3 with a ribbon-form rope as taught by Habano.

(Decision, p. 8.) However, Applicant submits that the elimination of back-twisting would not have been a motivating factor for such a modification of Gale. Since there would not have been a motivation for such a modification, Applicant submits that it would not have been obvious to combine Gale and Habano in the asserted manner, even assuming that Habano does teach that a ribbon-form rope can be used as a hoisting rope in elevators.

**(a) Habano's teachings that the ribbon-form rope eliminates the back-twisting tendency of conventional twisted ropes would have provided no motivation to have replaced the cables 3 of Gale with the ribbon-form rope of Habano.**

As well-known in the art, back-twisting is a concern for ropes that are not loaded, such as the traveling cables (which carry power and communication lines to the car) and balance ropes (which are the focus of Habano) that dangle from the car in many systems. However, back twisting is not a concern for ropes that carry a significant load, especially in applications in which the suspended load is constrained against any type of twisting motion. In an elevator system, in which (i) the suspension ropes are subjected to significant loads such that there is no slack in the ropes, and (ii) the guide rails constrain the suspended loads to vertical-only movement, back-twisting is not a concern for tensioned suspension ropes.

The round cables of Gale are held taut by the weight of the car and counterweight, which in turn are permitted only vertical movement. In fact, the tensioning arrangement of Gale insures that "no slack is permitted in the cables" (page 3, lines 44-46 of Gale). Therefore, there would have been no concern that the cables would back-twist.

Since back-twisting would not have been a concern for the round cables of Gale, the cited teachings of Habano regarding elimination of back-twisting tendencies would not have provided any motivation to replace the round cables of Gale with the ribbon-form rope of Habano.

**(b) The alleged teachings of Habano that a ribbon-form rope can be used as a hoisting rope in elevators would not have rendered it obvious to have replaced the cables 3 of Gale with the ribbon-form rope of Habano.**

The Decision also cites to the alleged teaching in Habano that a ribbon-form rope can be used as a hoisting rope (allegedly in elevators) in finding motivation to replace the round cables of

Gale with the ribbon-form rope of Habano. However, even assuming *arguendo* that Habano does teach that a ribbon-form rope can be used as a hoisting rope in an elevator, Applicant submits that such a teaching does not render the resultant combination obvious, because there is no suggestion that the combination would have been desirable. Even assuming that the teachings of Habano and Gale can be combined, or that Gale can be modified, that would not render the resultant combination or modification obvious unless the prior art also suggests the desirability of the combination or modification. MPEP 2143.01, citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Therefore, since the elimination of back-twisting tendencies would not have provided any motivation to replace the round cables of Gale with the ribbon-form rope of Habano, the alleged teaching in Habano that a ribbon-form rope can be used as a hoisting rope does not render the resultant combination obvious.

- (2) **In affirming the Examiner’s rejection of claim 16 (along with claims 2, 5 and 19) as obvious under 35 U.S.C. § 103 over Gale in view of Habano, the Decision overlooks an inconsistency between the cited motivations for modification.**

Further, while the teachings regarding the elimination of back-twisting are clear in Habano, the meaning of the term “hoisting rope” in the translation is less so. The interpretation that the term “hoisting rope” in the translation of Habano can correlate to the round elevator-suspension cables of Gale, is inconsistent with the teachings of Habano regarding the elimination of back-twisting.

As noted in Applicant’s Appeal Brief and Reply Brief, there are a number of possible interpretations of the passage, “hoisting rope or balance rope in elevators, etc.,” the interpretation of which has been central to the obviousness rejection of claims 2, 5, 16 and 19. As also noted, Applicant does not believe that a single occurrence of the term “hoisting rope” in the translation should be interpreted to include load-bearing ropes in an elevator system, where no other language in Habano corroborates such an interpretation.

The citation in the Decision of Habano’s teachings regarding the elimination of back-twisting tendencies underscores the impropriety of such an interpretation. The juxtaposition of the passages in Habano regarding back-twisting and regarding using ribbon-form rope as “hoisting rope or balance rope in elevators, etc.,” undermines the interpretation that Habano teaches or suggests the

use of ribbon-form ropes in place of the round elevator-suspension cables of Gale. The second paragraph of the "Detailed Explanation" portion of the translation reads:

As a type of special rope, this type of ribbon-form rope has been used as hoisting rope or balance rope in elevators, etc. In order to eliminate the back-twisting tendency of the conventional twisted ropes, the twisted ropes are combined to form a flat belt structure. This type of ribbon-form rope is routinely used.

Thus, the elimination of back-twisting is asserted in Habano as the reason for using ribbon-form ropes as hoisting ropes. However, as noted above, although it could be a concern in non-tensioned ropes in elevator systems, back-twisting is not a concern for suspension ropes in an elevator system. Therefore, the term "hoisting rope" in the translation should not be interpreted to refer to an elevator suspension rope.

### CONCLUSION

In view of the foregoing points that Applicant believes have been misapprehended or overlooked in rendering the Decision, Applicant requests that the Board reconsider its decision to affirm the Examiner's rejection of claim 16 (along with claims 2, 5 and 19) as obvious under 35 U.S.C. § 103 over Gale in view of Habano, and that those rejections be reversed.

Since the remaining claims depend variously from claims 2 and 16, Applicant requests that the rejections of the dependent claims be reversed also.

Therefore, Applicant requests that all of the rejected claims be passed to issue.

Please charge any additional fees or credit overpayment to Deposit Account No. 15-0750, Order No. OT-4331.

Respectfully submitted,

RICHARD J. ERICSON



Sean W. O'Brien  
Reg. No. 37,689

Otis Elevator Company  
Ten Farm Springs  
Farmington, CT 06032  
(860) 676-5760